134 LOW BACK PAIN IN CYCLING: DOES IT MATTER HOW YOU SIT?

W van Hoof,[1] K Volkaerts,[1] K O'Sullivan,[2] B Malfait,[1] S Verschueren,[1] W Dankaerts[1]. [1]*KU Leuven, Leuven, Belgium;* [2]*University of Limerick, Limerick, Ireland*

10.1136/bjsports-2014-093494.134

Background Low Back Pain (LBP) is a common problem among cyclists, although studies investigating LBP during cycling are scarce. Most studies have focused on LBP and geometric bike-related variables. Until now no cycling field studies have investigated the relationship between maladaptive lumbar kinematics and LBP during cycling.

Objective To examine lower lumbar kinematics in cyclists with and without non-specific chronic low back pain (NSCLBP).

Design Cross-sectional cycling field study.

Setting Recreational and competitive cyclists.

Patients 8 cyclists with NSCLBP classified as having a 'Flexion Pattern' (FP) disorder and nine asymptomatic age-and gender-matched cyclists were tested. Subjects performed a two hour outdoor cycling task on their personal race bike.

Main outcome measurements Lower lumbar kinematics were measured with a wireless monitoring system (BodyGuard^{TM}). Pain intensity during and after cycling was measured using a numerical pain rating scale.

Results The NSCLBP (FP) subjects were significantly more flexed (P=.018) at the lower lumbar spine during cycling compared to healthy controls and reported a significant increase in pain (P<.001) over the two hours of cycling. One-way repeated measures ANOVA revealed a significant main effect for group (P=.035) which remained significant when adding saddle angle as a covariate (P=.05). The difference in posture between groups did not change over time.

Conclusions The findings of this first field study suggest that a well selected subgroup of cyclists with NSCLBP (FP) adopted and sustained increased lower lumbar flexion during cycling. This appears to reflect an inherent maladaptive motor control pattern at the lower lumbar spine during cycling. This posture is maintained and associated with a significant increase of LBP. These findings suggest that in this subgroup LBP during cycling is related to maladaptive lower lumbar kinematics. Investigating rehabilitation/prevention strategies that address the control over the lower lumbar region during cycling seems the logic next step.

LOW BACK PAIN IN CYCLING: DOES IT MATTER HOW YOU SIT?

W van Hoof, K Volkaerts, K O'Sullivan, et al.

Br J Sports Med 2014 48: 609
doi: 10.1136/bjsports-2014-093494.134